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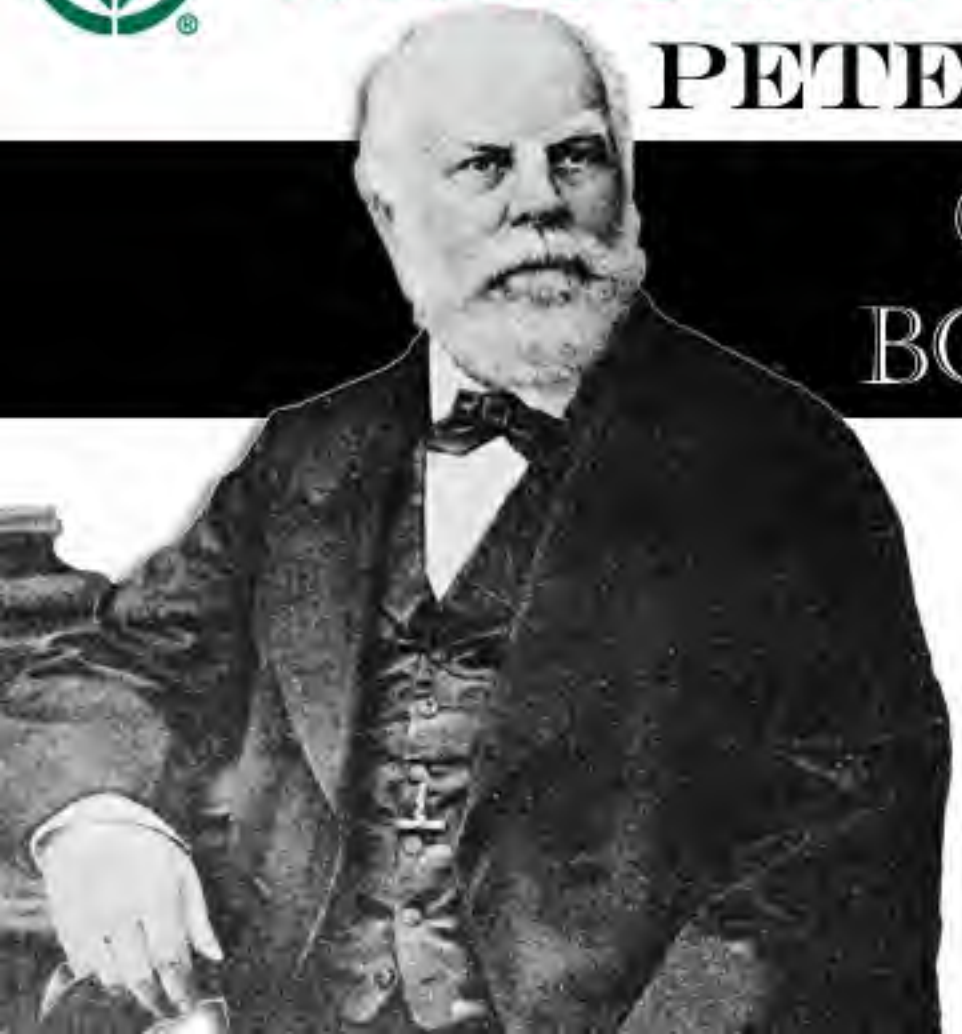

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The small section of Juncus articulati caudati to which this and the two following species belong is a very natural one, which may be characterized thus:

Caules e rhizomate brevissimo caespitosi teretes

Folia teniissima distincte septata

Flores in capitulo pauciflori s. rarius multiflori sessiles

~~Capitula~~ Panicula composita s. decomposita

Sepala lineari lanceolata plerumque acutissima, nervosa, interiora longiora

Stamina 3 – 6 hinc in eadem specie varia

Stylus in stigma brevissimum attenuatus

Capsula mucronata s. apiculata acuminata

Semina caudata multiradiata

The only species known to me as belonging here, are confined to the eastern and southeastern Regions of North America.

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42. J. asper n. sp. caulibus (bipedalibus et ultra) caespitosis ~~rigidis~~ erectis ~~rigidis~~ cum foliis rigidis papillosso-asperatis; paniculae compositae seu decompositae ramis erecto-patulis; capitulis paucis (2-6) floris ~~laxibus~~ v. sepalis late lanceolato, subulatis rigidis multinervis, laevibus, ~~exterioribus brevioribus~~, interioribus longioribus staminibus sex fere duplo superantibus; capsula ovato-oblonga sursum attenuata apiculata rostrata supra semitri-lobulata; vix brevioribus; antheris late linearibus filamentum fere aequantibus, v. ovario lanceolato; stylus eo brevior albus stigmatibus magis ovato oblongis; linea lata costatis, caudatis.

Hab. in paludibus New Jersey, Durand, ~~&~~ Quakerbridge, Pickering; in Hb. Sartwell. — Grows in a sphagnous swamp, 6 or 7 miles S.E. of Philadelphia, where it grows together with several forms of J. canadensis. C. E. Smith — in fl. & fr. Aug & Sept.

— A very curious and interesting species; well characterized by the characters above given and distinguished for its ~~stem~~ ~~caudate~~ tail-seeded calyx by its ~~large~~ rough stem, its large flowers 6 stout stamens, and larger usually purplish-tinted seeds. — Roughness is a more character in Juncus, ~~which~~ ~~so~~ first noticed only in the South American J. nudiflorus Kunth, and the Brazilian J. rugosus Steud. ~~the roughness of the flowers of J. S.~~ In all the flowers are smooth, while in J. falcatus the stem alone are smooth but the flowers rough (see page 452) — all the parts of the plant are very rigid. The stem 1 1/4 - 2 1/4 feet high; the panicle

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2 or 3 – 6 or 7 inches long less in expansion, fruit heads 4–6 lines in diameter, usually with 3 to 5 but sometimes only 2 flowers; flowers 2½ lines long or more, capsule scarcely exceeding the rigid and almost spines pointed ~~[illegible]~~, green or dark-ish tipped sepals; outer sepals indistinctly 5 nerved, inner ones (at least with dry state) strongly 7 nerved; capsule reddish brown, at base completely, above partially 3 celled; seeds 0.5–0.6 lines long, the ~~length~~ ~~being nearly half the length~~; the lower appendage thick and usually short, the upper one not quite as long as the seed itself, but more the half its length; whole seed with tests about 0.2 or 0.3 lines long. Seed with 12–14 ribs and distinct cross cuticle.

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43 J. candatus Chap. Ill. S. St. 495 (Ex. S publ.) caespitosis foliosis rigidis foliis caulibus; paniculae comp. s. decomp. ramis foliatis capitulis parvis (2–5) floris; sepalis lanceolatis extensis, brevibus, contiguis, stamina 3–6 aequantibus multinervis; capsula e basi ovata triangulata pyramidata multicostata, ~~fusco~~-atro-rubente semi tri-loculari, brevius auriculata; liberis folianti gracili, foliis brevioribus; ovario linearis lanulate in stylo brevem semi-abeunte, stigmatibus exsertis; seminibus linearis-oblongis, multo-concavis longe striatis — candidis. J. erythrocarpus Chap. olim in herb. from S. Carol. Curtis to Florida Chapman, Alabama Baldwin, Louisiana Hale. — Very similar to the last, but smooth, with much smaller flowers, long exserted capsules, slender stamens irregularly in number, and ~~[illegible]~~ more slender seeds. — Mainly 2–5 flowered by the species seen, quite erect with rather erect branches; frequently 2–4 lines in diam., with 2–4 or 5 flowers; flowers 1¾ lines long, with very unequal sepals, stigmas and the capsule long exserted beyond the stamens, of regularly pyramidal shape and very deep red-brown and almost black colour. The number of stamens is quite variable, but most frequently 3 than 6; in 40 flowers of 8 different specimens from all the localities mentioned above I have found: 4 only with 6, 9 with 5, 11 with 4 and 16 ~~with~~ or nearly one half, with 3 stamens and in no instance did ~~I find in~~ all the flowers on one plant ~~with~~ exhibit the same number of stamens. Seeds 0.45–0.50 line long, 2½–2¾ diameter equal to length, appendage stramineous or white, 1 mostly very long, upper one as long or longer than the lower one shorter; whole seed with the testa 1.0–1.2 l. long — strae of seed very numerous and close

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45 J. Mertensianus Dong: caulibus e rhizoma crasso repente humilioribus (spithamaeis pedalibus) vaginis fol. compositis amplexantibus plurifloris 15-25 laxiusculis s. minus compressis; floribus in capitulis singulis binis congestis atropurpureis; sepalis ovato-lanceolatis, extensionibus acuminato-subulatis, intensioribus plerumque subbrevioribus obtusis mucronulis seu saepius acutis extensioribus acutis; stamina (3-)6 superantibus, capsulam late obovatam obtusam mucronulatam aequantibus seu superantibus; antheris oblongis seu oblongo linearibus, rapissim mucronulatis, filamentis aequantibus seu ex brevioribus, stylo ovario obtuso aequante ~~seu~~ plerumque ex brevior; seminibus oblongo-obtuse trigonis, brevissime cuneatis, reticulato-multicostatis.

Hab. Sitka Islands, Unalaschka Chamisso

From the Northwestern Coast, Mertens, to the Cascade Mountains Lyall, and Rocky Mountains Drummond (H. Engelmann, Hayden) Southward to Colorado Medicine Bow Mts, Bigelow Mts

Hell. & Hort. 565. Var. β. in the Rocky Mts, Bourgeau

— J. ensifolius Hook Flor. Bor. Am. 2. 191, Gray in N. Hall & Harb. Pl. E. 77. J. platyphyllus Nuttall

Var. β. paniculatus, caule elatiore (ultra 6 pedali) vaginis viridi-nitidis 10-15 floris capitulis (7-9) in paniculam compositam dispositis.

With some hesitation I refer the Rocky Mountain plant, which I have before me in numerous well characterized specimens, to J. Mertensianus of the Northwest Coast, because my specimens of the latter are rather incomplete; but they are distinct enough to prove Meyer entirely wrong when he refers the Sitka plant to his J. platyphyllus (Fl. Ross. 4. 228) Bourgeau, to be sure, describes

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describes the leaves of his plants as flat, but they are not flat like those of S. palustris, but flattened and adverse like those of S. rigidus. — ~~In the original~~ Stem 7–14 inches high, obtuseness, but only ~~not~~ acuminate only in the S. rigidus below, smoothish upwards, weak and flaccid (Hall); leaves as in all the Cas. folii of very different width, usually 1/2 – 1 or rarely 1 1/2 ~~lines~~ but in S. 1 1/2 – 2 1/2 lines wide; heads 4 1/2 – 6 lines in diameter; flowers very distinctly pedunculed, 1 1/4 to commonly 2 lines long; inner sepals as in this whole section very variable, obtuse to acute or acuminate, usually shorter, but in some flowers of H. Sitka specimens even longer (as Bongard describes the) than the external ones, sometimes only 2/3 or 3/4 the length of the sepals, usually 6, but sometimes 3 (Bongard) and 3 – 6 (H.S.L. 4–5 Kellogg & S.S.K.G.) in Sitka and Cascade Mts specimens; anthers as long as or usually shorter than the filament, often apiculate; ovary as well as capsule always short and obtuse; style as long or shorter; the seeds make an near approach to those of the last section, they appendages ~~are very closely~~ to this, being sometimes quite conspicuous; in Hall's Colorado specimens they are usually quite short, still in a specimen of Dr Hayden's from the almost as long as the diameter of the seed. the seed itself is 0.23 – 0.30 lines long, the length of the appendages 2 – 2 1/2 diameters ~~long~~; or with the appendages 0.30 – 35 and even 0.50 in the above specimen of Dr Hayden, 8 – 12 ribs are visible ~~Thorpe~~ on the side; the surface is regularly reticulate with fine cross lines.

Var. S. looks very different from the ordinary form with a tall stem (very flat) broad leaves and a panicle only 2 inches long; but otherwise I confess I essential differences from the ordinary form.

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46 J. Xiphidioides Mey.: caulibus e stigmate crasso repente elatis (~~sesquipedalibus~~ 1-4 pedalibus), capitulis paucis vel multifloris paucis s. plurimis, floribus pedicellatis; sepalis lanceolatis obtuse acuminatis aequalibus seu interioribus obtusioribus brevioribus staminibus fere duplo superantibus capsulam ~~pyramidatam~~ acutam mucronatam (1-locular. ~~vix rostratam~~) fere aequantibus; antheris (filamentis oblongo-linearibus) fere aequilongis ovato in stylum breviorem attenuato; stigmatibus subapertis; seminibus ovato oblongis utrinque apiculatis (reticulatis ~~dorsi lineolatis~~).

β. auratus: caulibus gracilibus elatis (bipedalibus) ~~foliis latioribus~~ vaginis ± foliis latioribus superantibus; panicula sepe decomposita ~~multi~~ capitulis paucis ~~f~~ (5-10) floris staminibus ~~auratis~~ nitentibus; sepalis ~~lanceolatis~~ aequilongis, exterioribus ~~obtusiusculis~~ utrinque acutis; capsula prismatica rostrata exserta.

γ. littoralis: caulibus robustioribus elatis (2-4 pedalibus) vaginis ± foliis latis suspicie excurentibus; panicula sepe decomposita capitulis paucis vel ~~plurifl.~~ (3-20) floris flores pulo angustis estriatis fuscis; sepalis exterioribus acutis interioribus obtusiusculis utrinque acutis s. obtusiusculis mucronatis palo s. vix superantibus; capsula acuta seu rostrata vix brevioribus, antheris ~~filam~~ sepe apiculatis filamentis paulo longioribus; seminibus oblanceolatis.

δ. montanus: caulibus humilioribus (spithameis sesquipedalibus) foliis angustioribus basi plerique auriculatis ~~paniculae~~ capitulis ~~magnis~~ plurimis ~~plurib~~ paucifloris (3-10) floris pallidioribus paniculatis seu paucis (raro singulis) plurifloris 12-20 vel multifloris (20-40-50) floribus paulo minoribus; sepalis ~~interiorib~~ brevioribus

plerumque acutis, staminibus filiformibus sepala superantibus
antheris filamentis ~~pesque~~ brevibus, seminibus oblanceolatis
capsula ~~deputata~~ oblonga mucronata aequilonga
— In xiphoidis Torr Bot Bound. p. 222 Gray Pl. Wilkes Hort. C.C.

Var δ. macranthus. Capitulis radicibus medius
sesquipedalibus — bipedalibus) foliis angustioribus basi cordatis
capitulis parvis (88-40) floribus; floribus
fructiferis majoribus, sepalis fere aequilongis, stylosis
saepius, filamentis vix brevioribus, antheris filamentis
subbrevioribus; seminibus majoribus abrupte apiculatis
majoribus. ⊥ S. polycephalus α ~~sic~~ part Hook R. Bor A. l.c.

Var ε. triandrus, caule humilis elatiore (spithamaeo
bipedali) foliis angustioribus, v. latioribus, saepe dimidiatis;
capitulis majoribus (mediis 15-30) (parvis 5-8 floris)
sepalis saepius ~~saepius~~ vix floribus majoribus atrofuscis;
triandris; sepalis aequilongis seu saepius oblongis oblongis; apiculis
antheris oblongis filamentis ~~brevioribus~~ vix brevioribus
dilatatis; pulvo majoribus. S. cuspidatus Wirbst...

capitulis dense caespitosis, ~~non Hook Kunth~~ non Gray ~~Gray~~

On the Pacific Slope of the Cordillera
from Southern California to Vancouver, and extending
eastward beyond the Rocky Mts into the plains.

Var α was collected on Mt Diablo, near the Summit,
Brewer Cal State Survey 838; Var β is the original plant
of Mexico which seems to be peculiar to the ~~seacoast~~
region of California; Monterey, Hanke & Fremont
Bolander, Fort Tejon, Xantus; ~~Mt Diablo~~
Var γ. ~~[illegible]~~ the Lower Rocky Mountains; ~~[illegible]~~ from
Oregon Spalding, Lyall, to Colorado Hall & Harbour
& New Mexico Fendler 858 Wright 1925; ~~the~~
~~small headed form~~; ~~New Mexico~~ W and in the
plains of Saskatchewan Drummond and Fort Nelley Hooker
the small headed form; ~~Nightingale Mts~~ Coues & Palmer
70 in New Mexico Wright. 1923 in part and West
Texas, Lindheimer; ~~Hb Deane~~; Var δ only in North
California Douglas and Canada Mts Lyall (in Herb
distribution Polyglot & as S. insignis)
Var ε from Umatilla Chain to the Cascade Mts
Lyall and (the specimen from) San Francisco Bolander

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Phixiphoides.

This species is the type of the whole group of Lasipolis, ~~and may~~ eventually is as variable in extent as any of its eastern congeners, and its extreme forms as widely apart, if we take into consideration size of stem & leaves, number of flowers in a head, ~~inflorescence~~, and even number of stamens. But the flower and fruit are remarkably uniform, in all the forms, and transitions between all of them are not wanting. — The flowers are 1/2 lines long, rarely a little smaller; in var β larger; their sepals are narrow and as in all the allied forms variable; stamens ~~and~~ rarely more than half as long as sepals, and Seeds 0.23–0.26 l. long, and attenuate at least at the lower end, except in var β; the length usually about equal 2/12 diameter; about 8 ribs are visible on the side, reticulation and cross ~~striation~~ Circulation of the area very ~~neat~~ delicate but distinct.

Var α. is often 2½ feet high, with a stem of 3 lines wide, and leaves 3 or 4 and sometimes in 6 lines wide; panicle 4–8 inches long; heads in some forms, ~~for example~~ in the original Mexican specimen few, in others many flowered; seeds each slender and almost fusiform.

Var γ. is similar to the last, with leaves 2–3 l. wide is distinguished by the pretty, golden straw colored glistening panicles about 4 inches in length, sepals almost naveless, capsule usually longer than the sepals and larger than in the other forms.

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Var γ. The form of the Western is lower, with fewer heads, either few-flowered & a small panicle about 1½ or 2 inches long or many flowered, 1 to 5 or more in number; these large heads (&) and 3-4 lines in diameter, leaves usual 1–1½ l. wide — Var δ may be considered a large flowered, large headed form of the latter; leaves ½–1½ l. wide, flowers 1¾ l. or more in length; seed thicker, 0.25–0.26 l. long thicker than in the other forms and with short and abrupt apiculate points. — Var ε with its very flat and somewhat curved shortish leaves, looks very dwarf and stiff; and capitulum few large heads looks quite peculiar, but fl. & fruit & seed are undistinguishable from those of the other forms; — I have over this & fine this same shape of leaves and heads again in forms of I. Mertensia & of I. plumosa so that in herbaria they are often confounded with this form of Xiphidium, but can readily be distinguished by their flowers. — The seeds are intermediate between those of the foregoing and those of the other forms.

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The larger flowers, obtuse ovary and capsule and long pointed seeds distinguish I. Mertensia from Xiphidium — but it must be confessed that the distinction is perhaps too slight.

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2-3 (Bipedalis)

47. J. oxymeris n. sp. caulibus & e rhizomate repente erectis seu ascendentibus, compressis; foliis (compressis a latere), plurimis distinete nodosis; panicula ~~supra~~ seu ~~corymbosa~~ decompositae effusa; capitulis 5-10 floris pallidis; floribus pulchellatis; sepalis linearibus-lanceolatis acuminato-aristatis, ~~acutissimis~~, interioribus paulo longioribus; staminum 6 quarta parte superantibus, capsulae lanceolatae rostratae vix longiore, ovario ~~lanceolato~~ ~~conico~~ stylo eo ~~paene~~ aequilongo aequilibus stigmatibus exsertis; antheris longe linearibus filamento plus quam duplo longioribus; stigmatibus exsertis; ovario apice attenuato lanceolatum et stylum aequi longum ~~attenuatum~~ aequilibus exsertis; seminibus ovato-lanceolatis.

— San Bernardino, Bolander.

J. acutiflorus, floribus solito longioribus, Bentham. N. Hook. (p. 341.)

Sacramento Valley Hastwegg. 2017 San Bernardino, Bolander; — ~~Of this~~ Though only two specimens of this plant are before me and these quite dissimilar to each other, I venture to propose them as a new species distinct from J. xiphoides by their sharp pointed sepals of which the inner exceed the outer ones, their elongate almost subulate capsule, which is similar in shape to that of J. nodosus, ~~and~~ the very large anthers which are more than twice as long as the filaments. ~~and~~ ~~next page~~ Hastwegg's plant is 3 feet high, has broader leaves (2½ lines wide) without any stipular appendages and with rather incomplete septation; panicle 6 inches long, and somewhat contracted. — Bolander's plant is 2 feet high, ~~of a very~~ narrow only 1 line wide, with stipular appendages (auriculae) of the sheath, and more distinctly knotted; panicle 5 inches

17-20
1.1-1.3

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long, and more spreading: It is not spring

F. By the shape of the anthers and pistil it approaches

F. H. Bivens 1 3/4 - 2 lines long, green, tinged with red at the tip

the style of same length, ~~[illegible]~~ stamens about

3/4 the length of the sepals. The corolla seen, the

corolla only before me (seems to be similar to

that of the last species, and are about 0.25 l. long).

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Jan. 3 Leaks quite distinct

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basi acuminatis s. inappendiculatis

68 P. phacocephalus n. sp. caulibus erectis (digitalibus ultra bipedalibus) foliisque compressis apice capitulum singulum plerumque paucifloro multiflora seu densissime plura minora paniculata gerentibus; v. floribus 25 majoribus (atropurpureis) pedunculatis; sepalis ~~bilineato~~ lato-ovatis, acqui longis, omnibus acuminatis v. acutis seu cuspidatis, seu interdum obtusiusculis, stamina 6 paulo superantibus, capsula obtusa seu anulariangulata semiovata subumbonulata sepalis seu ea paulo brevioribus; antheris late linearibus filamento bis ferme longioribus; ovario lanuginoso; stylus aequilongus attenuato, stigmatibus exsertis; semina obovata utrinque apiculata, arcuis sublaevibus reticulatis. —

J. Rostkovii? Meyer in Rel. Haenk. 1. 142.

α. legitimus: Haenke: glomeratus: caule pedali ~~et altiore~~ ~~sed gracilibus~~ vaginis foliis bipedalibus in foliis latioribus ~~et~~ ~~sed~~ ~~gracilibus~~ ~~et~~ ~~sed~~ ~~gracilibus~~ ~~et~~ ~~sed~~ ~~gracilibus~~

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conspicuous style – ; erect stigmas
and their seeds; shallower the ~~size~~ height of
the stem, width of the leaves or the ~~size~~ composition of the
inflorescence may be. – ☉ ♃ below some of the forms, with lf for deep sway, are found at the low pt of the peninsula

Var α is 1–1½ feet high, with ~~leaves~~ leaves stem
1–1½ lines wide, as long or longer than the stem.
Head, large, 5 l. diam., consists of 15 to 25
flowers, usually 2 or 3 together, sometimes on 6 or 8
forming a rather dense panicle.

Var β. ~~is much taller~~. leaves 2 lines wide,
shorter than the tall stem; heads ~~loosely flower~~ with only
10–12 flowers, ~~loosely~~ — in a rather
short panicle of sometimes 6 heads — length. –

Var γ is the small matted form; which
with its broad heads, large flowers & long protruding stigmas,
resembles so closely the small form of S. platy
that close examination is necessary to distinguish
them. – Heads 15–24 flowered, single or two together;
leaves ¼–½ line wide
4–5 l. diam., &c

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☉ Flowers 2–2½ lines long; sepals of
different shape, always broad at base, and
either obtuse or usually acute or ~~long~~ acuminate,
and even with subulate tips; the inner ones are
about as long as the outer ones but often
more obtuse; ~~the, very~~ ~~always~~ large; anthers
in a sinus of var γ full 1½ l. long; in other
forms sometimes much shorter, usually only ½ l.
long, usually about 1 l. long, always broader and much longer
than the filament. – capsule ~~usually~~ exceeding the sepals by more than
seeds 0.31 – 0.37 l. long
the length equal to 2 or 2½ diameters; 8 or 9
ribs visible; reticulate: close but distinct; areas
naked or with ~~marked~~ delicate one or two perpendicular lines,
thus similar to the seed of S. scirpoides, such however
has fewer ribs. – E. Meyer (l. c.) describes the fruit
very correctly, ~~but~~ supposing that the flattened appearance of the

Lost Mountain
Lee's Ferry
Colorado

49 P. chlorocephalus n. sp. caulibus (pedalibus) sesquipedalibus e rhizomate brevi repente erectis (caespitosis); foliis compressis; capitulis singulis seu paucis; spathis membranaceis longioribus, multifloris; floribus magnis longe pedicellatis, pallidis, sepalis oblongis obtusis s. exterioribus saepius interioribus que mucronatis; aequilongis seu interioribus paulo longioribus; staminibus antheris linearibus ~~filamento~~ multilongioribus vix exsertis; ~~ovario ovati~~ stylo ovario vix multo longiore exserto; ~~capsula~~ ? seminibus ?

In the higher ~~Sierras~~ of Cal. ~~& Nevada~~, Dr Hillebrand, Cal. Sl. Sur. 2338, — dry places on peaks near Mt Dana, ~~Dr Brewer~~ 10000 feet high, Brewer; Cal. Sl. Sur. 1804 Mountains near Carson City, Nevada, C. L. Anderson.

— allied to the last by its few heads, diff. large flowers, long anthers & it is readily distinguished by its pale colour, which at first black would seem white rather appearance plant, its broad and obtuse sepals, small ovary with an exceedingly long style. The specimens ~~before~~ me are from 10–17 inches high, ~~of~~ a pale green, with the sheaths often rose ~~or red~~ purple; leaves ½ to 1 lin. wide, (compared likelihood item) but not acuminate, shorter than the stem; heads in the sp. before me 1–3; heads 6 or 7 lin. diam. consisting of 15–20 or 25 very conspicuously pedicelled flowers. These are 2½ lines long; the pale or ~~a~~ out of the base nutmeg-wise slightly green, glistening. The sepals broad and quite obtuse or mucronate or sometimes ~~mucronate~~ cuspidate; stamens scarcely shorter than the sepals; anthers 4 times as long as filaments; style twice as long as short ovary; ~~stigma~~ ~~shorter~~ and longer than the stigmas. Fruit not seen.

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44. J. Canadensis Gray caulibus caespitosis tenuibus laevibus; foliis radicalibus parvis-multifloris; sepalis lanceolato-linearibus plerumque acutis, interioribus longioribus, staminibus 3 paulo superantibus, capsula triangulari-ovoidea plerique antheris oblongo-linearibus filamentis brevioribus; ovario in stylum brevem attenuato, stigmatibus tenuibus vix sepalis extentis; semibus oblongis s. oblongo-linearibus multicostatis plus minus rendatis.

Var α. brevicaudatus; caulibus gracilibus capitulis paucifloris (2-6); sepalis acutis seu saepe obtusis ~~seminibus oblongis lineolato-multicostatis appendicibus diametro semina~~ ~~dimidiam~~ ~~per~~ appendicibus seminibus oblongis lineolato-multicostatis diametro semina subaequantibus. — J. acuminatus Tom. N. Y. 2. 327 Gray Man. ed 2. 481 Chapin R. 494, non Michaux.

A coarctatus; caulibus humilissimis erectis (spithamis, sesquipedalibus), paucifloris capitulis ramis erectis; sepalis patentis s. saepe obtusiusculis; staminibus oblongis filamentis duplo brevioribus; capsula ~~fere~~ castanea acuta plerumque longe exserta. J. Can. B. Gray l. c. (1½-2½ pd)

B patulus; caulibus elatioribus erectis seu declinatis, paniculae ramis patulis; sepalis obtusiusculis antheris linearibus filamentis brevioribus, capsulae staminibus majoribus obtusiuscula mucronata sepalis paulo longiore breviter exserta. (1½-2½)

Var β. subcaudatus caulibus gracilibus erectis seu decumbentibus, paniculae ramis patulis seu saepe horizontalibus; capitulis (8-20 floris) plurifloris; sepalis acutissimis, antheris oblongo-linearibus filamentis multo brevioribus; capsulis ovoideis plerumque acutatis exsertis, rarius mucronatis subexsertis; appendicibus brevibus seminibus oblongis, diametro multo brevioribus, lineolato multicostatis

2, 9944

(1½–2½ pedalibus)

var γ. longicaudatus: caulibus erectis robustis rigidis; paniculae contractae seu effusae capitulis plurimis – multi- (8–20–50–90) floris; sepalis acutis seu raro obtusiusculis; antheris oblongis saepe mucronatis filamentis saepe duplo brevioribus capsulis prismaticis obtusis mucronatis seu saepius acutatis, fusatis; sepalis acutis v. planis expansis appendicibus semi a oblongo seu circolato pilosis ~~subacutis~~ dilatatis multo longioribus. —

I. Canadensis & Gray l.c. – I. paradoxus Gray ~~Manual~~ l.c. 481; Chapm. 494, An anot. plan. non Schlegel.

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This species ~~extends~~ seems to make its home in the eastern part of the United St. and to extend west in the region of the Great Lakes to the Upper Mississippi, & down along the Atlantic coast ~~again along the Gulf coast~~ in the Gulf states to Louisiana, leaving out the central states of the Mississippi valley to which it appears to be a stranger. — ~~The smaller form of~~ Var α is decidedly northern, extending from the Northeast States to Canada & Lake Superior and south to Pennsylvania; Prof Porter gets it in the neighborhood of Lancaster & Chapman gives Georgia as its southern limit – "I have seen no specimen" but I have seen no specimen from south of Pennsylvania, and one in Prof Gray's the Prof Lorenz. but rather form seems to be the more common one, ~~and in that case the~~ the taller one with spreading panicles has been found from Pennsylvania Porter to western New York, Gray Sartwell, Vasey, Central Ohio Sullivant — Wisconsin Lapham. Var β is a form

J. Canadensis 3,

of the Atlantic States from Canada later to New Jersey & Pennsylvania Dana, Smith, Eng, Porter, District of Columbia; Bebb J. Canadensis Nuttall & Georgia Ogeechee (Lib. Nat. of J. acuta) ~~see Torr. Fl. 335~~ — Var. γ is the most common of all, extending over the whole ~~District~~ region inhabited by the species, with the exception perhaps of its northernmost part, as I have seen no specimens from Can. or from the U.S. north of Massachusetts.

Another intricate species, the different forms of which are as wide apart in habit as well as in artificial characters as they possibly can be, and still connected by insensible transitions, so that even the different varieties can not always be kept clearly distinct. In no less confusion is the synonymy of the plant. It is quite impossible that specimens of this wide spread and easily recognizable species should not have been obtained by botanical collectors long since, and indeed we find ~~them~~ such among Michaux (Lettre 1.a) and among Schweinitz plants, and no doubt in many old herbaria; but somehow or other its striking degree of characters were overlooked, and it was thrown together with other species such as J. polycephalus or J. articulatus (large subarticulate form) under both of which names this and J. pelocarpus var. fasciculatus are often found thrown together. ~~In Michaux, but it lies without a name, Michaux gathered it — Canada~~ This, and together with the two last species, are well distinguished from all the other articulate ones by their tailed seeds and their proportion of their usually strongly veined sepals, among which the inner ones always ~~overlap~~ exceed the outer ones; it is distinguished from its allies principally by the smaller number of stamens, the smaller and differently shaped seeds; the shape and proportion of the capsule

Var.

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small, usually 3–4 flowered

Var α, distinguishable from the other forms by its smaller flowers, 1/4 – 1/2 rarely (in rare superior specimens) 3/4) inches long, and the form of the smaller seeds; these are 0.25–0.33 line long, ~~the~~ 2/3 diameter being equal to the length, and the distinct appendages are as abstruse to the sheath, so that ~~both~~ the whole seed appears a length of ~~from~~ 0.40 – 0.60 line; 7–9 ribs, connected by delicate cross lines, are visible on the outside.

The smaller form, with the erect panicle ~~but~~ and with darker and more of the longer capsules larger looking heads is what ~~I~~ has been usually taken for J. acuminatus by ~~Amer~~ Mr. Torrey & botanists; Michaux's plant however comes from South Carolina, while our present form is I believe not found south of Pennsylvania; moreover, those botanists who had an opportunity of examining the original specimens declare them identical with J. pallescens (see pag. . . .).

The dark ~~erect~~ panicle is 1 or 1/2 to 3 or 4 inches in length and usually the length not more than 1 or 1/2 inch wide, loose- or rarely dense-flowered; the point heads look ~~with~~ large or ~~of~~ of the (erectish long erect) dark capsules.

The large form does not seem to be as frequent as the smaller one, and at first sight is so widely different from it that ~~I~~ I only doubtfully ~~of~~ has been referred to it; usually it was taken for J. articulatus or J. debilis or even. It is tall slender & soft decumbent stem, is large spreading panicle (4–9 inches long and proportionably wide) and its small short heads seem to separate ~~in widely~~ at the last, and moreover the sepals are ~~sharpish~~ (in all the specimens examined by me) obtuse. The last character however is sometimes (I have seen it in Pennsylvania & White Mts. sp.) ~~at times~~ in my general form of acuminatus; the much short capsules ~~contribute the~~ make the heads appear much smaller than in acuminatus.

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1.2 J. Canadensis

A form collected by E C Smith, at Germantown near Philadelphia has (acute sepals 10–12 flowered heads and) but can not otherwise be distinguished from the usual form of petalous

Var. β. ~~does not seem to have attracted~~ is rather a rare plant, and does not seem to have attracted the attention of botanists, though it has been collected, especially about Philadelphia and in New Jersey, until Mr Bebb of Wadleigh and Mr Smith of Philadelphia studied it with a good deal of care and attention. The shortness of the appendages induced most botanists to place it away from its close affinities, near or with J. pelleseens; but there is I can not entertain the least doubt that closely sifted Teasing sufficient character remains to keep it distinct per se even as a mere variety; the length of the appendages being to extremely different even in seeds from one and the same capsule. The whole plant however is more delicate, lighter green, the stem weak and very often decumbent, the panicle very loose, usually with long and often horizontally spreading branches, heads pale, 8–15–20 flowered; flowers larger than last, 1½ to 2 l. long, sepals always only 1 nerved, sometimes subulate as long as acute, capsule rarely obtuse, & obtusely mucronate more commonly acute or acutate, as long or longer than the sepals. Seeds 0.25–0.36 l. in long, ~~length~~ seed equal to 2 or 2½ diameters; with the appendage 0.33–0.50 or rarely even 0.60 or more lines long; appendages ~~fort~~ usually less than, often only one half the diam of the seed; 7–8 ribs visible, usually very distinct, with an approach to reticulation.

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6. ~~# [illegible]~~ B-6 — 8 inches, ~~[illegible]~~ as much as 10 inches S. and 2-5-7 inches wide

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Var β is the most polymorphous of all the ~~forms~~ of this species; it is ~~stouter~~ (taller) more rigid than the others, the panicle ~~[illegible]~~ # with spreading but rather horizontal branches very much branched with fewer flowered heads (5-8-20) usually loose, compared with larger many flowered heads 30-40 in ~~[illegible]~~ Delaware specimen 80-90 usually loose, or sometimes quite compact; sometimes 5 sepals generally 1-3-V nerved very acute, or rarely somewhat obtuse, very unequal or sometimes nearly equal in length; ~~petals~~ usually capsule (usually ~~obtu~~ pointed and divergent) as long or usually ~~somewhat longer~~ exceeding ~~the~~ the sepals; sometimes ~~papa~~ acutate and elongate. — ~~Flowers~~

Flowers 1½-2 lines long, greenish, at last ~~[illegible]~~ the capsules usually ~~[illegible]~~ light brown.

Seeds ~~[illegible] many specimens, thicker~~ appear those of var β, larger with ~~some~~ longer shorter appendages or very slender, somewhat smaller and with longer appendages; the former ~~have~~ are 0.30-0.46 lines long, length equal to 2½ diameters, and with appendages 0.60-1.00 lines long; the ~~[illegible]~~ latter have a ~~length of~~ 0.52-1 the same length but a length of 0.25-0.37 line, the length being equal to nearly 3 diameters; total length same as last, 0.60-1.00 lines. (Strigose or hairs or nothing) or seed visible outside 8-10-15

A curious form with branched heads, the single branches clustered into spikes was found by Mr Commons near Delaware, Salisbury Md. see pag 427

This is the form which by most American botanists has been usually ~~called~~ taken for J. pandoxus Mergen but I have above (p. ...) shown that Mergen's plant must be sepals "externally longitudinally" strigose designated as J. pallescens var fasciculata, and cannot be our plant with external sepals strigose. Mergen's name had no reference to the curious seeds, but to the frequent foliaceous expansions of the ~~plant~~ which seem to be very rare in the present form

7/ — The subvariety A comes in habit and stature nearest to var β, but its small short heads ~~[illegible]~~ and mostly obtuse sepals give it a very peculiar aspect, so that our botanists have ~~often confounded~~ ~~frequently confounded with~~ sometimes confounded it with J. debilis or with J. ~~articulatus~~ alatus; its rather tall and weak stem (1½ – 2½ feet high) with the large and spreading panicle, 4 – 9 inches long and proportionately wide and the very short capsules seem to separate it widely from the other subvariety; but these characters are of slight value. Mr E.C. Smith gets it from at Tinicum near Phila. which unites them with var β, having the seeds of that, but the ~~acute~~ ~~[illegible]~~ greater number of flowers (10–12) in the larger heads, and the ~~acute~~ pointed sepals of the other.

The smaller form, the subvariety B is readily distinguished by its low stature and erect panicle ~~with longest darker~~ contrasted to the Bordeaux gutter grass and on account of the longest capsules, longer looking heads; sepals usually acute, but in Penn & White Mt. sp. obtuse. American botanists have usually taken it for J. ac. Mx. Torr — see p. 4

A

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Genus

The section of Astragalus Carinaliae to which this and the 4 following species, as well as the Astragalus J. Leschenaultii Gray belong, ~~are~~ is a pretty natural one in character as well as geographical distribution. I would characterize it thus

Caules e rhizomate repente seriati compressi seu acuripites.

Foliis a latere compressa (seu aversa, equitantibus ~~foliis~~ invidata) impuncta septata. Vagina auriculata seu subinde semiexcurrentes in eadem specie varia

Capitula ~~pauciflora plerumque pleuriflora~~ laxa singula seu paniculata

Flores ~~laxi~~ in capitulis paucifloris seu plerumque plurifloris lax: pedicellati ~~fere semper~~ except. J. chlorophyll atro-fusce

singulis seu plurimis compacte paniculatis

Legumen late extensum membranaceum seu auriculis introrsibus saepius brevibus obtusiusculis s. saepius longiora, in eodem capitulo varia

Stamina 3–6 in eadem specie varia

Ovarium stylo brevi vel elongato ~~praeter~~ instructum capsulam membranaceam saepe carnosam seu varia ex reliq. sub in Coulanii

Semina apiculata saepius reniformia, interdum ~~[illegible]~~ Rhizome ~~[illegible]~~ of the Carinifolia slope extent eastward to and a little beyond the Rocky Mts.

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